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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,962	11/09/2001	Vernon Gardiner	GDV-2	3765
20808	7590	03/22/2004	EXAMINER	
COLE, LAURA C				
ART UNIT		PAPER NUMBER		
		1744		

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/035,962	GARDINER, VERNON
	Examiner Laura C Cole	Art Unit 1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 05 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-9, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9, 12 and 13 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 November 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 03082002.
- 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities: It is confusing that the plurality of bristles is "U-shaped" and the middle area (inverse bottom of a "U") would be flattened. Would the bristles be considered "U-shaped" while having a "flattened" bottom? Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Driesen et al., USPN 6,094,769.

Driesen et al. disclose the claimed invention including a toothbrush (5) that has a plurality of bristles (1) in which a cross-section of the bristles forms a polygon (Figure 2) wherein at least a portion of each bristle is twisted lengthwise (Abstract; Figures) such that the tooth contacts more than one corner of the polygon during brushing (Abstract.)

3. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Weihrauch, USPN 6,161,243.

Weihrauch discloses the claimed invention including a toothbrush (Figure 1) that has a plurality of bristles (9) in which a cross-section of the bristles forms a polygon (Figures 3-11) wherein at least a portion of each bristle is twisted lengthwise (Figure 2) such that the tooth contacts more than one corner of the polygon during brushing (Column 1 Line 66 to Column 2 Line 9.)

4. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Meunier, USPN 2,599,191.

Meunier discloses the claimed invention including a toothbrush having a head comprising at least one tuft of bristles (9) wherein the tuft of bristles comprise a plurality of U-shaped bristles (see Figures), wherein a first end and second end of the bristles are embedded in the head (see Figures; Column 2 Lines 43-46) such that a middle section of the bristles form a flattened area (as shown in Figures 3 and 4, the central portion is more "flattened" than the rest of the bristle, and a portion in the very most center part of the top of the loop is flat and horizontal; additionally Column 4 Lines 45-53 state that the loop may be substantially square in shape).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meunier, USPN 2,599,191 in view of Rider, USPN 2,317,485.

Meunier discloses a toothbrush comprising a handle (7) and a head (8) wherein there is a bristle sub-assembly comprising a plurality of U-shaped bristles (9, 14, 15) wherein a first and second ends of the bristles are embedded in the head (as shown in Figures 3-4) and that the middle section of the bristles form a flattened area (Figure 3 is generally flat while Figure 4 is more rounded). The middle section of the bristles in each tuft is at a 90 degree angle to the middle section of the bristles in the tuft directly adjacent to it (Figures 5 and 6, groupings (14) are perpendicular; Column 3 Line 70 to Column 4 Line 7.) The U-shaped bristles serve to brush, hold, and withdraw matter from the teeth (Column 1 Lines 16-23). Meunier does not disclose the bristles having a polygonal cross-section.

Rider discloses a toothbrush that bristles of a regular polygon cross-section, the regular polygon being specifically a triangle (Figure 5), a square (Figure 6), a pentagon (Figure 7), or a hexagon (Figure 8). Bristles of these shapes are advantageous to prevent the formation of interstitial openings (Page 2 Column 1 Lines 32-38) and so that the corner edges can clean more efficiently (Page 2 Column 2 Lines 1-18).

It would have been obvious for one of ordinary skill in the art to modify the U-shaped bristles with a round cross section of Meunier for bristles having a regular polygonal cross section such as the ones that Rider teaches so that the brushing is done faster and more effectively utilizing the corner edges of the polygonal shape.

6. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meunier in view of Rider, USPN 2,317,485, further in view of Hamilton, USPN 1,179,426.

Meunier and Rider disclose all elements above, however they do not include the arrangement of having one interior set of U-shaped bristles and two exterior sets of U-shaped bristles that have the exterior sets of bristles sandwich the interior set of bristles, and the middle section of the bristles in the exterior set positioned perpendicularly to the middle section of the bristles in the interior set of bristles.

Hamilton discloses a toothbrush comprising a handle (1) and a head (3) wherein there is a bristle sub-assembly comprising a plurality of U-shaped bristles (4) wherein a first and second ends of the bristles are embedded in the head (as shown in Figure 3; Page 1 Lines 77-85) and that the middle section of the bristles form a flattened area (Figure 3 is generally flat). The middle section of the bristles in each tuft is at a 90 degree angle to the middle section of the bristles in the tuft directly adjacent to it (see orientation in Figures 1 and 2 and placement in Figure 3; Page 1 Lines 90-100.) Further, the exterior sets of bristles (4) sandwich an interior set of bristles (5) and are positioned perpendicularly as seen in Figure 2. The U-shaped bristles are so that there is less scratching or injury without decreasing the cleaning properties of the brush (Page 1 Lines 85-89).

It would have been obvious for one of ordinary skill in the art to modify the arrangement of U-shaped bristles tufts that Meunier and Rider disclose to have the arrangement that Hamilton teaches for more effective cleaning.

7. Claims 1-4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meunier, USPN 2,599,191 in view of Driesen et al., USPN 6,094,769.

Meunier discloses all elements above, however does not disclose the bristles having a twisted polygonal cross-section.

Driesen et al. disclose the claimed invention including a toothbrush (5) that has a plurality of bristles (1) in which a cross-section of the bristles forms a polygon (Figure 2), regular polygon being the rectangle of Figure 2 that has internal angles of 90 degrees, and wherein at least a portion of each bristle is twisted lengthwise (Abstract; Figures) such that the tooth contacts more than one corner of the polygon during brushing (Abstract.)

It would have been obvious for one of ordinary skill in the art to modify the U-shaped bristles with a round cross section of Meunier for bristles having a regular polygonal cross section such as the ones that Driesen et al. teach so that the brushing is done faster and more effectively utilizing the corner edges of the polygonal shape.

8. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meunier, USPN 2,599,191 in view of Weihrauch, USPN 6,161,243.

Meunier discloses all elements above, however does not disclose the bristles having a twisted polygonal cross-section.

Weihrauch discloses the claimed invention including a toothbrush (Figure 1) that has a plurality of bristles (9) in which a cross-section of the bristles forms a polygon (Figures 3-11) wherein at least a portion of each bristle is twisted lengthwise (Figure 2)

such that the tooth contacts more than one corner of the polygon during brushing  
(Column 1 Line 66 to Column 2 Line 9.)

It would have been obvious for one of ordinary skill in the art to modify the U-shaped bristles with a round cross section of Hamilton for bristles having a regular polygonal cross section such as the ones that Weihrauch teaches so that the brushing is done faster and more effectively utilizing the corner edges of the polygonal shape.

9. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meunier, USPN 2,599,191 in view of Rider, USPN 2,317,485 and in further view of Stvartak et al., USPN 6,601,272.

Meunier, Rider, and Stvartak et al. disclose all elements above. Meunier and Rider do not disclose the toothbrush having a gripped handle.

It would have been obvious for one of ordinary skill in the art to modify the handles of Meunier and Rider for the one that Stvartak et al. teach in order to provide an advantageous gripping surface as necessary in the moist environment of the mouth area when brushing teeth.

10. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meunier, USPN 2,599,191 in view of Rider, USPN 2,317,485 and in further view of Saltzman, USPN 2,304,319.

Meunier, Rider, and Saltzman disclose all elements above. Meunier and Rider do not disclose the toothbrush having a gripped handle.

It would have been obvious for one of ordinary skill in the art to modify the handles of Meunier and Rider for the one that Saltzman teaches in order to provide an

advantageous gripping surface as necessary in the moist environment of the mouth area when brushing teeth.

***Applicant's Arguments***

11. In the response filed 05 January 2004, the Applicant contends that:
  - A. Neither Meunier nor Rider, alone or in combination, teach or suggest a tuft of a plurality of U-shaped bristles, where a middle section of the bristles form a flattened area.
  - B. Hamilton does not show *tufts* of bristles comprising a plurality of U-shaped bristles.
  - C. The middle sections of the bristles of Hamilton are not positioned perpendicularly to the middle section of the bristles in the interior sets of bristles.
  - D. Stvartak does not provide what Meunier and Rider lack.
  - E. Saltzman does not provide what Meunier and Rider lack.
  - F. The basic considerations which to apply to obviousness rejections under MPEP Section 2141 are: (1) the claimed invention must be considered as a whole and (2) and must suggest the desirability and obviousness of making the rejection (3) the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention and (4) reasonable expectation of success is the standard by which obviousness is determined.

***Response to Arguments***

12. Applicant's arguments A and C- F filed 05 January 2004 have been fully considered but they are not persuasive.

A. Examiner reasserts that Meunier teaches and suggests a tuft of a plurality of U-shaped bristles (see above) where a middle section of the bristles form a *flattened area*. *The American Heritage® Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company* defines “flattened” as “to make flat or flatter”. Meunier in Figures 3 and 4 clearly have a middle portion that is “flattened” in respect to the portions implanted in the bristle head. Furthermore, in Column 4 Lines 45-53 the loop may be substantially square, implying a “flattened” portion of the loop shown in Figure 3 or Figure 4.

C. The middle sections of the bristles of Hamilton are positioned perpendicularly to the middle section of the bristles in the interior sets of bristles. As shown in Figures 1 and 2, bristles (4) are arranged perpendicularly as the lines indicating bristles (4) are drawn with that representation, also see Page 1 Lines 68-76.

D. Stvartak does not include a teaching of U-shaped bristles, but includes the feature that neither Meunier and Rider lack, a handle comprising four thumb grips arranged radially around an axis of the handle, the thumb grips being concave with raised ridges, and having an elliptical cross-section.

E. Saltzman does not include a teaching of U-shaped bristles, but includes the feature that neither Meunier and Rider lack, a handle comprising four thumb grips arranged radially around an axis of the handle, the thumb grips being concave with raised ridges, and having an elliptical cross-section.

F. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the

claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that the effective working area of the device of Meunier are the curved points of contact on the looped tufts, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

13. Applicant's argument B filed 05 January 2004, with respect to Hamilton have been fully considered and are persuasive. The rejection of Claim 1 under 35 U.S.C. 103(a) of Hamilton has been withdrawn.

***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C Cole whose telephone number is (571) 272-1272. The examiner can normally be reached on Mondays through Thursdays, and alternating Fridays, from 7:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Warden, can be reached at (571) 272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*LCC*  
LCC

08 March 2004

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